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THOMAS G. NEWMAN,
EDITOR.

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# EDITORIAL BUZZINGS.

**Dr. A. B. Mason** is to award the Premiums at the Michigan State Fair in the Honey and Vegetable Department. He is an expert in these lines, and will do creditable work.

**The Award of the Premiums** at the Detroit Exposition gave universal satisfaction to all the exhibitors. It is a pleasure to act as "judge" for such an intelligent and agreeable body of exhibitors as were there.

**Our Friend,** Mr. H. D. Cutting, has done nobly in getting a grand exhibit of honey at the Detroit Exposition, notwithstanding the poor honey crop. He is a *worker*, and the "Management" are to be congratulated upon having secured such an able and reliable Superintendent of the Apiary Department.

**The Tri-State Fair** will be held in Toledo, O., from Sept. 8 to 13, 1890. We regret to notice that the Premiums in the Apiarian Department have been cut down to $60. Last year, and, indeed, for several years quite liberal Premiums have been offered. This will necessarily cut down the exhibits very much. It is very poor policy to do this, but we understand that the "Management" has gone into other hands—and, we might add, into *greener* hands, in more ways than one. They will likely see their mistake as the years roll on.

What a contrast is presented between the Premiums at Toledo and Detroit—the latter are over $500—nearly ten times the amount of the aggregate Premiums at Toledo. Dr. A. B. Mason is the Superintendent at Toledo, but is in no way responsible for the cut in Premiums.

**The Editor** having agreed to serve as judge at the Detroit Fair and Expostion, in the Apiary Department, concluded to go to Ohio and visit relatives for a few days, returning by the way of Detroit, and make a short visit to some bee-keepers that might be on the route, as circumstances permitted.

At Medina, Ohio, we stopped over a train to call on our friend and co-laborer, Mr. A. I. Root. We found him busy, as usual, in the management of his large manufacturing establishment and bee-keepers' supply house. His son-in-law, Mr. John Calvert, showed us all over the premises, and although it is now quite extensive, Mr. Root is adding to its capacity by the erection of another large building, in order to accommodate his rapidly-increasing business. He makes almost everything used by apiarists, and it requires much room and machinery, as well as many hands to do it. Ernest was away in New York visiting apiaries, on his bicycle, and so we were disappointed in not seeing him and his excellent wife. The ladies of the "Root" family—Mrs. A. I. Root, Mrs. Calvert (her daughter), and Mrs. Ernest Root—are charming, and the young ladies, the heads of departments in the office, are intelligent and faithful workers in that "hive of industry."

We had an excellent visit there, and as the train we expected to take did not put in an appearance in time for us to make connection with the New York, Pennsylvania & Ohio railway going east, "John" kindly took us in a buggy, and drove to Russel (14 miles). This gave us a chance to have a long visit with him, and see the fine country between these two points. This we enjoyed most fully, and arrived at Kent, in Portage county, on time.

Here Mr. Benj. Harding, our nephew, has a small apiary, but the drouth prevented the bees from gathering honey, and so far only a few pounds of comb honey is the result of the season's operations, where there should have been many hundreds of pounds. Mr. H. resides about two miles east of Kent. In the city, Mr. L. G. Reed has the principal apiary. It is a marvel of neatness, but the same atmospheric conditions have cut his honey crop short.

We were unable to stop over at Bedford, to see Mr. J. B. Hains and Miss Dema Bennett. We saw the apiary, however, as the train was pulling out of that place. We presume Mr. Hains' crop is also short.

At Cleveland we also visited relatives, and then took the steamboat for Detroit. At the Exposition we found a magnificent apiarian exhibit—about double the quantity exhibited last year; it was of excellent quality, and arranged most attractively.

This is written at the hotel, after looking the exhibit over, on Wednesday evening. To-morrow we are to award the premiums, and will give more details of the display next week, after we return home.

The "Management" of the Exposition have been very liberal with Premiums (over $500), and this has made the exhibit what it is. Several of the exhibitors have displayed their whole crops.

Mr. H. D. Cutting (the Superintendent) has been working very hard to get a creditable display; so has Mr. W. Z. Hutchinson, Mr. M. H. Hunt, Mr. O. L. Hershiser, and others. Dr. A. B. Mason and Mr. J. Y. Detwiler are here from Toledo, and to-morrow and Friday there will be a pleasant re-union among bee-men.

**A Honey Thief** was the heading of an item in the Chicago *Mail* of Aug. 23, 1890, and the account of the honey-stealing was told in the following "short and *sweet*" manner:

A sweet-looking thief was John Snyder, of Lawndale, as he stood before Police Magistrate Doyle this morning, charged with stealiug the honey from the hives of Officer Fairchild of the above suburb.

Said the officer: "I have lost the honey from my hives for the last four years, and I firmly believe that this fellow has been the thief. I captured him the other night while making off with a tubful of the sweetness."

The prisoner, with swollen face, did not deny that he was the guilty party, and he was held to the grand jury on the charge of grand larceny.

Officer Jesse Fairchild is one of our host of readers and customers, and has quite a large apiary which he has run successfully in connection with his official duties for the past few years. We are glad that the bees helped to catch the thief by "marking" him in their accustomed effective way. He will think twice next time ere he tackles the possessions of the hard-working bee.

**A Bee-Line** is frequently spoken of, and its origin no doubt can be traced to the bees themselves, as they are very strong, and can fly very fast and for a long time without taking a rest. Their eyes are made to see a a great distance, and when away from their habitations they mount up in the air until they see the place where the hives are situated, and then fly toward it in a straight line with great velocity; hence the shortest line between two given points is often referred to as a "bee-line." This habit is taken advantage of by hunters of wild honey, to trace the hives in the woods.

**It is a Well Known Fact** that bees never visit two or more distinct classes of flowers on the same trip, but always procure a full load of pollen or honey of whichever kind they commence on first, and return to the hive or home to unload before making a change. While this is so, bees frequently visit flowers of the different kinds of clovers on the same trip, for I have seen occasionally a bee go from a white clover blossom to that of the red, then to that of the Alsike, all on the same trip; but the first holds good generally, even with the different kinds of clovers.—*Exchange.*

## SEPTEMBER.

BY SOPHIE L. SCHENCK.

A change creeps over Nature. A deep flush
Mounts to the maple-leaf; the air is clear;
The grapes are purpling, and a crimson blush
Spreads o'er such flowers as deck the waning year;
Ripe apples bend the trees, while golden-rod,
By roadside, lane and meadow, gayly nod.

Now whistlings of the quail are often heard
From buckwheat fields, while, on the calm air, floats
The drumming of the partridge. Not a bird
Builds now a nest; but night is thrilled by notes
From crickets near, and locusts' drowsy hum
That seems to say: "September time has come!"

—LADIES HOME JOURNALL.

# GLEAMS OF NEWS.

**The Toronto Industrial Exhibition,** which is to be held from Sept. 8th to the 20th, at Toronto, Ont., has prepared a splendid premium list for its Bee and Honey Department, and Canadian apiarists should avail themselves of this opportunity of making a display which shall be a credit to the industry of bee-keeping in the great Dominion. Regarding the list of premiums, Mr. R. F. Holtermann, of Romney, Ont., writes thus:

I believe that Toronto leads in giving encouragement to an attractive display of honey and bee-keepers' supplies, and for this the Manager deserves great credit, as also does Mr. D. A. Jones. I say that they deserve credit, because there is no doubt this display from year to year has done much in popularizing honey, not only in Toronto, but throughout our broad Dominion.

As will be seen by the appended prize-list, the present year, take it as a whole, is a credit to the committee—Messrs. Vail, McKnight, Emigh and Otter, and the Association. The prizes offered amount to $302, and 3 silver and 3 bronze medals.

By carefully studying the list, it will be seen that every encouragement has been given to bee-keepers who can only exhibit in small quantities. This is as it should be, and will doubtless bring out a great many exhibitors—in fact, I have heard that the exhibit in the honey-building will be greater than any previous year.

There is just one little point of difference which I have—it will be seen that the prizes offered to supply dealers pure and simple, are three silver medals and $7.00. In my humble opinion, this is not as it should be, surely, for bee-keepers go to exhibitions to learn what different appliances are being made, and also what new inventions. It probably pays a supply dealer no better to show his wares irrespective of prizes, than it would the bee-keeper, and we know that in Toronto supply dealers have almost ceased showing; they say that it pays them better to send out extra circulars for the amount that it would cost them to exhibit.

I regret to see no prize offered for varieties of honey. When only the lightest honey is shown at Fairs, the public are apt to think that anything varying from that color must be impure. But let me repeat, I never saw a prize-list before which, in my estimation, is so well suited to give satisfaction to bee-keepers and the Exhibition Association. R. F. HOLTERMANN.

The following is the Premium-List for "Honey and Apiarian Supplies," referred to by Mr. Holtermann, a copy of which, with the rules governing the same, may be had by sending the request on a postal card to Mr. H. J. Hill, the Secretary, at Toronto, Ont.:

| | 1st. | 2d. | 3d. | 4th. |
|---|---|---|---|---|
| Best display of 200 lbs. of extracted granulated honey in glass | $10 | $5 | $3 | $ |
| Best display for 500 lbs. of liquid extracted honey, of which not less than 250 lbs. must be in glass, quality to be considered | 20 | 15 | 10 | 5 |
| Best display of 500 lbs. of comb honey in sections, quality to be considered | 25 | 20 | 12 | 6 |
| Best display of 20 lbs. of comb honey in sections, quality to be considered, that is to say, clean sections and best filled | 10 | 6 | 4 | 2 |
| Best display of 100 lbs. of extracted liquid linden honey, in glass, quality to be considered | 8 | 5 | 3 | |
| Best display of 100 lbs. of extracted liquid clover honey in glass, quality considered | 8 | 5 | 3 | |
| Best beeswax, not less than 10 lbs. (manufacturers of comb foundation excluded) | 6 | 4 | 2 | |
| Best foundation for brood-chamber | 3 | 2 | 1 | |
| Best foundation for sections | 3 | 2 | 1 | |
| Apiarian supplies.....1. Silver Medal. | | | | |
| " " .....2. Bronze Medal. | | | | |
| Best style and assortment of tins for retailing extracted honey.....1. Silver Medal. | | | | |
| Best style and assortment of tins for retailing extracted honey.....2. Bronze Medal. | | | | |
| Best style and assortment of glass for retailing extracted honey.....1. Silver Medal. | | | | |
| Best style and assortment of glass for retailing extracted honey.....2. Bronze Medal. | | | | |
| Best section super for top story and system of manipulating, product to be exhibited in super as left by the bees | 3 | 2 | 1 | |
| Best and most practical new invention for the apiarist, never shown before at this Exhibition | 5 | 3 | 2 | |
| Largest and best variety of uses to which honey may be put, illustrated by individual samples of the different things into which it enters as a component; for example, say one or two samples each in canned fruits, cakes, pastry, meats, vinegar, etc... | 8 | 5 | 3 | |
| Best and most useful queen-nursery cage | 2 | | | |
| For most tasty and neatly arranged exhibit of honey in the Apiarian Department, all the honey to be the production of the exhibitor. $20 of this prize is given by the Ontario Bee-Keepers' Association | 35 | 15 | 10 | |

**Extracted Honey.**—The following is on Mr. R. Wilkins' honey-labels:

Honey is one of Nature's purest sweets, valuable both as food and medicine. It has always been esteemed a luxury—the food of kings; eaten in small quantities with other food it is very nourishing, and favors the cure of pulmonary diseases and colds.

The scientific management of bees, and the use of the honey-extractor, make extracted honey so abundant that all may use it.

Honey is very diversified in its color, taste, odor, and disposition to become candied, or granulated, depending mainly on the variety of bloom it is collected from, and the weather in which it is gathered. Cold weather favors speedy granulation; its becoming granulated is one of the best evidences of its purity, yet some of the best California honey requires two seasons to become candied.

This honey was gathered mainly from sage blossoms on the mountains of California. Of course, we cannot entirely avoid having it mixed with honey from other flowers. I am sorry that it is impracticable to give our customers positive evidence of the genuineness of our goods unless their own taste is reliable. I merely assert that our honey is pure and good, at the same time realizing that the mere say-so or guarantee of a stranger who is interested in the sale of his goods, is but slight commendation. But I will suggest that our honey comes from the southern part of the State of California, noted for its producing a greater quantity of choice honey than any other part of the world, yielding it here by the hundreds of tons.

**Beginnings.**—All things must have a beginning, and it is sometimes interesting to look back over the beginning of an enterprise and note the losses, successes and failures. The Knoxville, Iowa, *Express*, last spring, contained nearly a column article concerning the apiary of Mr. J. W. Bittenbender, and in it is given Mr. B's experience for 17 years as follows:

In the spring of 1873 I purchased 4 colonies of bees, and being successful, in the spring of 1875 I had 15 colonies to begin the season with, and in the fall they had increased to 24, and I had sold $300 worth of comb honey, selling it readily at 25 cents per pound.

In the fall of 1875 I invested $150 in bees, in all conceivable kinds of hives, but mostly in straight-framed hives, with holes cut in the top of the frames for the bees to enter the boxes; but my success was turned to sorrow in the spring of 1876, and only 18 of my 50 colonies were left to cheer me on my way.

I hived the swarms in the empty hives as they issued, with the old comb remaining, and as the season was good, in the fall I had nearly all of my hives filled with a fair crop of honey, giving me about $200.

In the spring of 1877 I suffered a loss of 11 colonies, leaving me with 34, the loss being in the tight-frame hives. Satisfying myself on this point, I began transferring the combs and making kindling wood of these hives, using new hives of the Langstroth pattern only.

As this was a poor season until fall, I had no swarms, but did have a surplus of about 25 pounds to the colony, and the bees had plenty to winter on.

In 1878 there was but little honey until July, when the linden was in bloom, then for two weeks the bees tried to "break their backs," so that I increased them to 49 colonies, and sold about $450 worth of honey, and came out in the spring of 1879 with 45 colonies, and was quite successful until the season of 1883, when so many bees suffered destruction throughout the United States, Iowa being no exception; but not being discouraged, although suffering a heavy loss, and seeing a prospect of a good honey season, I proceeded to buy up all the bees that were for sale, and succeeded in filling up my hives and receiving fair pay for my season's work.

**Honey-Dew for Winter Stores.**—Dr. Southard, of Kalamazoo, one of the brightest and most expert bee-keepers of the day, used to doubt the utility of honey-dew. Several years ago, however, when everybody's bees all over the country gathered so much honey-dew, and were all going to perdition with it in the winter, the doctor thought he would like to know something positive about it; so he saw to it that 5 or 6 colonies had nothing but honey-dew.

He winters them out-doors, and usually loses but one or two out of a hundred, and, sure enough, the 5 colonies having honey-dew exclusively, wintered as nice as a pin. It has been demonstrated that diarrhea among bees (the one and only cause of winter losses), is not caused by honey-dew nor cider, nor anything of the kind, but by the consumption of nitrogen from bee-bread or floating pollen. Well-ripened buckwheat honey is as good stores for winter as any in the world.—*Exchange.*

**Supply Dealers** who desire to handle a good Bee-Veil, should write for our dozen rates on the "Globe" Bee-Veils, to sell again.

# QUERIES and REPLIES.

## Proper Size of Mesh in Wire-Cloth to Exclude Bees.

*Written for the American Bee Journal*

QUERY 727.—1. How large a mesh of wire-cloth can be used for queen-introducing cages, and be sure that no worker can pass through to injure the queen? 2. Will soldered wire-cloth of ⅛x⅛ inch mesh, made of wire one thirty-second of an inch in diameter, be perfectly safe?—Conn.

I use 14 meshes to the inch.—G. M. DOOLITTLE.

I think it would be perfectly safe.—C. H. DIBBERN.

I prefer a mesh of 12 to the inch.—J. P. H. BROWN.

About ⅛ of an inch mesh, I think.—MRS. L. HARRISON.

1. I think eight to an inch safe. 2. Yes.—A. J. COOK.

We use common window wire-cloth.—DADANT & SON.

I have used no other save the ordinary screen-wire.—J. M. HAMBAUGH.

1. One-eighth of an inch would be all right. 2. Yes.—JAMES HEDDON.

2. I think not. The bees will get hold of the queen through so large a mesh.—A. B. MASON.

The mesh of the wire-cloth usually used for queen-cages is 12 to the inch.—G. L. TINKER.

With that size of mesh, ⅛x⅛, your queen is liable to damage from outside bees.—H. D. CUTTING.

1. I cannot say precisely. 2. Yes, if none of the meshes were enlarged by accident or otherwise.—R. L. TAYLOR.

1. I would use the ordinary black or green screen-cloth. 2. The larger mesh, the more the liability to lose the queen from stinging.—J. M. SHUCK.

What would you gain by such heavy and coarse wire? I have never heard any objection to the common wire-cloth, such as is used for screen-doors.—C. C. MILLER.

I never experimented in that direction, but I see no reason why a mesh ⅛x⅛ would not be safe. But of what advantage is the larger mesh? We *know* the *smaller* is safe.—EUGENE SECOR.

1. I have not experimented on that line, and do not need to. 2. It may be that ⅛x⅛ would be safe, but I would prefer a little smaller. The wire-cloth used for screen doors and windows is about right.—M. MAHIN.

1. I do not know. 2. I should think it would, unless it is meant that the mesh should be full ⅛; then, and in such case, it would be too large. If the mesh is formed partly by the wire, so that the holes would be some less than ⅛, then it would be safe.—J. E. POND.

1. Queens are caged to protect them from the attacks of bees that are likely to be hostile to her at the start. Nothing but fine wire-cloth is entirely safe—not less than 12 meshes to the inch, I should consider entirely safe. If the openings are too large, the bees may pull off the legs of the queen before they become reconciled. 2. No.—G. W. DEMAREE.

1. The common size used for window-screens will do very well. 2. Yes.—THE EDITOR.

## Questions Answered.

Charles W. Bolt, of Litchfield county, Conn., sends us several questions relating to matters of general interest to bee-keepers. They are answered as follows by A. H. Duff:

QUESTION—How long is a bee in going a mile; also, how long will it take one to go a mile, get a load from an average honey-plant, return and unload ready to start again?

ANSWER—Bees have been known to fly at the rate of 60 miles per hour, or a mile a minute. But in quest of honey they do not fly so rapidly. On an average they may fly a mile and return with a load every 20 or 25 minutes.

QUES.—Should the brood-frames or combs in brood-frames be kept just ⅞ of an inch apart for comb honey?

ANS.—Brood-frames, or frames of combs in the brood-chamber, should be spaced 1⅜ inches from center to center. Cut the frames from a board ⅞ of an inch thick, and leave ⅝ space between each frame. This will give 1⅜ inches for each brood-comb; for surplus honey, use 2 inches.

QUES.—Is enameled or porous cloth the best for all seasons, or is enameled-cloth best for spring and summer?

ANS.—Either will answer. The enameled-cloth will last longer.

QUES.—How is it best to manage in packing for winter when the combs are full of brood? I use the Simplicity hive, and have to take out combs and make room for chaff cushions.

ANS.—I do not consider chaff cushions in the Simplicity hive as any protection in winter. It is best to use large chaff hives and leave all the combs in, except in very weak colonies, when chaff cushions may be used as division-boards to contract the space.

QUES.—What method is best, when no extractor is used, to get the bees to take honey from surplus combs which have but half a pound to two or three pounds in each frame?

ANS.—The extractor is indispensable unless we expose the combs to the apiary, when the bees will clean them out. We think it better to keep them over, and give them next spring to colonies that need provisions.

QUES.—Why is it that Rev. L. L. Langstroth is poor, if he has accomplished so much in bee-culture?

ANS.—Because other bee-keepers "stole his thunder." Father Langstroth's inventions accomplished much for bee-keepers, but not for himself.—*American Agriculturist.*

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**Are you Going** to the Fair? If so, will you kindly send to this office and get a few samples of the BEE JOURNAL, and give them out to your friends there, and get up a club? We will send them to you with pleasure.

## A Song of Long Ago.

A song of long ago;
Sing it lightly, sing it low.
Sing it softly—like the lisping of the lips we used to know—
When our baby laughter spilled
From the heart forever filled
With a music sweet as robin ever trilled.

Let the fragrant summer breeze,
And the leaves of locust trees,
And the apple buds and blossoms, and the wings of honey-bees,
All palpitate with glee,
Till the happy harmony
Brings back each childish joy to you and me.

Let the eyes of fancy turn
Where the tumbled pippins burn
Like embers in the orchard's lap of touseled grass and fern;
And let the wayward wind,
Still singing, plod behind
The cider-press—the good, old-fashioned kind!

Blend in the song the moan
Of the dove that grieves alone,
And the wild whirr of the locust, and the bumble's droway drone;
And the low of cows that call
Through the pasture-bars, when all
The landscape fades away at evenfall.

Then, far away and clear,
Through the dusky atmosphere,
Let the wailing of the killdee be the only sound you hear.
O, sweet and sad and low,
As the memory may know,
Is the glad, pathetic song of long ago.

—JAMES WHITCOMB RILEY.

# CORRESPONDENCE.

## FOUL BROOD.

### The Disease in Canada, and Recent Legislation Thereon.

*Written for the American Bee Journal*

BY ALLEN PRINGLE.

I feel that I ought to say something to the readers of the AMERICAN BEE JOURNAL on the above subject. The fact that foul brood is making steady and certain, if not rapid, headway both in Europe and America, is sufficient justification. Within the past few months my own eyes have been opened to the extent to which the disease prevails in this Province, and to the impending danger, unless prompt and proper action be taken for its suppression.

Those who have looked into trans-Atlantic bee-periodicals this season, will have noticed the prominence of the subject of foul brood, and the prevailing alarm at its rapid spread, and persistence against the remedial efforts directed against it. In the United States, as in Canada, the condition is probably no better.

Owing to the fact that many bee-keepers who are suffering from the disease in their yards, very wrongly and foolishly attempt to conceal the fact; and in consequence of the additional fact that many have the disease who

are totally ignorant of its nature, and are unaware of its presence with them, the disease is much more prevalent than appears to the public through the periodicals or otherwise.

I have had abundant opportunity of late to verify the above fact. Up to the beginning of this year, never having seen any foul brood, or noticed much in the periodicals in reference thereto, save theoretical discussion of a something which nobody individually appeared to be troubled with—the quite natural impression I had was that a few cases of foul brood existed in Canada, here and there, but not enough to become exercised or alarmed about. This impression was moved somewhat at the last annual meeting of the Ontario Bee-Keepers' Association held at Belleville in January last, and has been completely annihilated since then.

At that meeting it became known that foul brood prevailed extensively in Western Ontario, and was rapidly spreading. With this unpleasant fact in view, the Association took prompt action towards securing such legislation as would be indispensable in any attempt at the complete suppression of the disease in this Province. The fruit of that initial step was that in the space of three months we had secured from the Provincial Legislature, an "Act for the suppression of foul brood among bees," which is probably the most perfect, and, on the whole, the best of its kind in the world to serve the purpose intended.

Under its provisions it became the duty of the Ontario Bee-Keepers' Association, through its Board, to appoint a Foul Brood Inspector, and Sub-Inspector, whose salaries are paid by the Government. This was promptly done, and the inspector has been almost constantly engaged ever since in the discharge of the duties of his position, which I am glad to say he is doing most efficiently and successfully.

As the inspector acts under my direction, as President of the Society, and as the Act requires all owners or possessors of bees having foul brood to give notice of the fact, subject, in default, to the penalties which it provides, my opportunities for acquiring information as to the extent, etc., of foul brood in the Province have been ample. Suffice it to say (and I think it ought to be said) that the disease is widespread, especially throughout Western Ontario, and has made sad havoc in some localities.

The inspector has reported to me that he finds apiaries, one after another, "fairly rotten" with the disease. No doubt the same condition of things exists in the United States, and as this state of things was not known here until unearthed by the effective machinery of the law, it will probably not be known there until brought to light in a similar manner; and as there is considerable interchange of bees and honey between the two countries, we are concerned *there* the same as you are concerned *here*. I therefore feel free in suggesting to our brethren across the lakes and the rivers, the propriety—yea, urgent necessity—of getting to work in these premises, and getting to work at once.

The time for profitless theoretical discussion about the essential nature of the disease, and the *modus operandi* of this plan of drug treatment and that, is, or ought to be, past. Like many diseases which afflict the *genus homo*, this bee-disease may be cured by a simple, natural process, without any drug-medication of any kind.

While our law authorizes the destruction by cremation of every colony virulently diseased, our inspector, Mr. Wm. McEvoy, although he has had hundreds of cases to deal with, mild and malignant, since he commenced, has not as yet been under the necessity of destroying a single colony. With the willing and intelligent co-operation of the owners he can cure all cases. This fact speaks for itself, and ought to command the attention of all who unfortunately are personally concerned in foul brood.

By this mail, I send to the office of the AMERICAN BEE JOURNAL, a copy of our foul brood pamphlet, recently issued as an official "Bulletin" by the Ontario Department of Agriculture. This pamphlet contains our inspector's method of treatment and cure as practiced by him. It also contains Mr. D. A. Jones' "starvation plan," which is the same in principle, only differing in detail. That the worst cases of foul brood may be cured by either of these methods is now proved beyond a doubt. Hence the folly of persisting in treating and experimenting with this drug or that, bees dying and disease spreading meanwhile.

I wish to draw the particular attention of the AMERICAN BEE JOURNAL to this "Bulletin." It not only contains the two successful plans of treatment as practiced by Messrs. Jones and McEvoy, but a copy of the Act under which we are working so effectively towards the suppression of that foul disease which is the withering vampire of bee-keeping.

This Bulletin, printed in English and German, is now in the hands of some seven to eight thousand Ontario bee-keepers. I would suggest to American bee-periodicals, to give their readers the benefit of its contents.

ALLEN PRINGLE,
*Pres. Ont. Bee-Keepers' Association.*
Selby, Ont., Aug. 14, 1890.

# HORTICULTURE.

## The Relation of Bees to Horticulture Considered.

*Read at Nebraska Horticultural Society*
BY REV. EMERSON T. ABBOTT.

I congratulate the Nebraska State Horticultural Society and the State Bee-Keepers' Association on the harmony found among them, and the fraternal feeling which they manifest toward each other.

You both have cause to be proud of the progress you have made, and of the push and intelligence manifested by your individual members. When I heard the able essay which Prof. Bessey read before the joint meeting last year, and saw how much interest he took in the work of the Horticultural Society and the Bee-Keepers' meeting, I felt that both societies had a friend that they could not value too highly. But I digress.

I was speaking of the harmony and good-will which prevails between these two societies. This stands for more than one realizes at first thought. No greater misfortune could come to a country than for its inhabitants to divide themselves up into societies, guilds, or castes, all of which are arrayed against each other, and endeavoring to build themselves up by denouncing and tearing others down.

Given this condition of things, and society instead of being one united whole, working for the common weal in a general way, at once becomes a lot of petty factions who have no interest in the welfare of any one, or anything, that does not belong to them exclusively.

It is plain to be seen that this state of things would soon pervert and overthrow the institutions of a free government, and lead to anarchy in its worst form. Instead of happiness and contentment, we would have on every hand strife, contention, and discontent, coupled with the meanest kind of selfishness.

This evil tendency, I am sorry to say, has and is in some quarters yet manifesting itself among the fruit-growers and bee-keepers of the country. Faint mutterings of a conflict of interest have been heard all over the land, and here and there these almost silent complaints of conflict have waxed louder and louder until they broke out in open denunciation, and a bitter warfare has been the result.

On the other hand there have been communities and societies like your own, who have been willing to bear and forbear, and to labor patiently and harmoniously to get at the facts in the case. These manifestations of

fraternal good-feeling have not been without their influence, and it now seems that the time is not far distant when these two societies, like the lion and the lamb, will lie down together in peace; or at least will be content to eat grass in the same pasture, or regale themselves with sweetness from the same flower. In confirmation of these statements I quote an extract from the *Orange Judd Farmer*, referring to a fraternal meeting of fruit-growers and bee-keepers in Columbus, Ohio, not long since:

> The bee-convention was invited by the Secretary of the Ohio State Horticultural Society to visit the horticulturists then in session in the same building. The horticulturists were discussing the question of fruit fertilization by insects, and the bee-men joined heartily. It was decided that the little, busy bee is a very useful insect to the fruit-grower in the way of aiding nature in the fertilization of flowers.

I will have something to say about this further on; but will remark here in passing that this may not be spoken of as an aid to nature, but a part of nature, as I think it was so intended in the Divine plan of things. But to quote further:

> The feeling between the fruit-growers and the bee-keepers is becoming more friendly every year. They are both beginning to see the necessity of the other for the best results in their respective lines of labor.

Let us see if we can get at the cause of this misunderstanding; let us look for a short time into the facts bearing on the case as they are related to each party, the bees and the fruit, and see if we can offer any suggestion to help solve this problem more completely, and promote further this feeling of friendship and good-will.

### IGNORANCE REGARDING THE BEE.

The cause of a large amount of this trouble may be expressed by the word *ignorance*, in the literal meaning of the word ignorance, "not knowing." We use the word generally in a bad sense, meaning to cast reflections upon the party to whom we apply it. This may be explained as willful ignorance; but this is not the kind of ignorance to which I attribute most of the trouble. It is true there are some people who are culpably ignorant of facts, or who at least ignore all facts, if they are not ignorant of them, and go on trying to make trouble and stir up strife and contention. But the ignorance I refer to is that which grows out of want of contact with the facts and their surroundings. There is too much in the world for one man to learn it all, and there are many things that we go through life ignorant of, simply because the occasion for investigating them has never come up; and then again there are some things we do not investigate because of the difficulties surrounding such an investigation.

On the side of the bees, I confess that this question has some difficulties that are very much in the way of an examination, and people who have no interest in investigating are very apt to stand at a respectful distance and take their knowledge at second hand. Now second-hand knowledge is not so apt to be accurate, and the knowledge not being accurate, the party draws wrong inferences, and arrives at adverse conclusions; and the beginning of trouble is at hand.

But we will not jump at any conclusions. I know a little about the bees at first hand, and will try to tell you what I know; and you, gentlemen of the Horticultural Society, know something about the fruit, so if I do not do justice to it, you can set me right on that point.

### BENEFIT OF BEES TO FRUIT.

Let us see first if the bees are any benefit to the fruit, as a balance against any injury they may do it, if in the end we find that they ever are an injury. In order to discuss this part of the question, it will be necessary for me to go over some of the ground covered in my essay of last year before the bee-keepers, and also discussed in part by the able paper of Prof. Bessey before the joint meeting.

Blossoms, by their color, odor, and nectar, attract insects in great numbers, and the insects draw nourishment from them. It is evident, then, that the flowers are useful to the insects. The question arises, are the insects of any use to the flowers?

It does not seem that the flower would put on its gorgeous robe and throw out its delicate perfume upon the free air to entice the insect, and continue to secrete the precious nectar in its bosom to regale the appetite of the visitor, if it were to derive no benefit therefrom. Nature is largely constructed on the plan of utility, or, as Prof. Gray has put it: "Where free lunches are provided, some advantage is generally expected from the treat."

So we are led to inquire, what advantage can the plant derive from the visit of the insect to the flower? At the risk of repeating some things that you are all familiar with, I desire to state a few elementary facts of botany.

### BOTANICAL STRUCTURE OF FLOWERS.

First, let us see if we can learn how a flower is made, and what office its various parts are intended to perform. Of course there is an endless variety of flowers, varying greatly in color, form, etc., but all ordinary flowers are composed of about the same parts, and these parts exist, more or less, for the same purpose.

Take, for illustration, an ordinary flower: It is composed of an outer whorl of leaves, generally green, called the "calyx." Inside of this is another whorl of leaves, which are frequently highly colored and very beautiful, called the "corolla." Inside of these we have another set of organs, called "stamens." These vary greatly in number in various flowers. On top of them is an organ called an "anther," which contains a fine powder called "pollen." This pollen carries the male element of the flower, or the sperm-cell.

Inside of these, in the centre of the flower, we find another organ, or there may be more than one, called a "pistil." This pistil is composed of three parts. The upper part is called the "stigma," the middle part the "style," and the lower part the "ovary."

This ovary is a hollow case, or pod, that contains rudimentary seeds called "ovules," in which is found at the proper time the embryo-sac that contains the germ-cell, or female element of the flower. So that here within these whorls of leaves the highest energies of vegetable life are concentrated, and the ends of that life accomplished.

Now, the sperm-cell, referred to above, must be brought into immediate contact with the germ-cell, or else no fruit will ever be produced. As I said before, the sperm-cell is found in the pollen of the anther, and the germ-cell in the ovary or ovules of the pistil. Why nature is so organized that it requires the union of these two elements to produce growth and development sufficient for the production of another perfect organism, is one of the inscrutable mysteries that will no doubt forever remain in the mind and heart of Him who, in the beginning, let that be when it may, "Spake and it was done, commanded and it stood fast."

The question is, how are these two elements, or protoplasmic germs, to be brought together. Where all of the organs are found in one flower, as in the one described above, with no obstruction between them, and they come to perfection at the same time, the process is a very simple one, yet full of interest. A gentle movement of the wind, after the anther has ripened and gotten ready for the process, and the potent grains of pollen, freighted with their life-awakening germs, come showering down upon the receptive stigma.

Presently there is formed what is known as the pollen-tube. This begins to grow downward through the style

in the form of a thin filament, enters the cavity of the ovary, and finds the orifice of an ovule, and, guided by some mysterious yet unerring power, makes its way to the embryo-sac which contains the bioplasmic something that we have called the germ-cell, or female element of life, and they immediately form a union.

Movement, growth, and cell formation commences, for all plant substance is only a multiplication of cells, and thus is formed the fruit and seed in which lies beautifully folded the embryo plantlet of the future tree, bush, vine, or whatever it may be.

### THE POLLINATION OF FLOWERS.

So far we have not seen any use for the busy bee; but some plants are so arranged that the process of pollination is more complicated, though the act of impregnation or fertilization is the same after the pollen reaches the stigma. They are so constructed that the pollen cannot reach the stigma, even though in the same flower.

Then again, the pollen-dust of some flowers is so constituted as to be of no use to the pistil of its own flower. In a great number of flowers the stamens and pistils are not fully developed at the same time. Then, many plants have two kinds of flowers—one kind with stamens only, and the other with pistils only, and sometimes these flowers are on entirely different plants. So that there seems to be a great many things in the way of the plant doing the very thing that is essential to the fulfillment of its being, and we must look for some other agency to bring these two elements together, or secure what we have called the pollination of the flower.

But, you say, if everything is arranged in nature to be in harmony and work perfectly, why were they not both always placed on the same plant and in the same flower, where they could not fail to come in contact? This brings us to another and very important part of our subject. Not only pollination is desired, but pollination in such a way as to secure *cross-fertilization*, and thus prevent what the stockmen call "in-and-in breeding." Just here comes in the work of the bees. In their visits to the flowers they carry pollen from flower to flower, and thus do for the plant that which it cannot do for itself. This explains why the plant secretes the nectar and throws out many other inducements to insects, principally bees, to pay it a visit.

The importance of cross-fertilization is not to be underrated in discussing this question of the benefit of bees to the plant. Mr. Darwin has shown, by a long series of experiments, that self-fertilized plants, that is, fertilized by their own pollen, are generally very much inferior in vigor and power of constitution to those that are cross-fertilized. So, you see, if we are to have healthy and fruitful plants and trees, we must avail ourselves of the work of the bees.

Many fruit-growers and gardeners have been aware of these facts and made use of them. We are informed that the gardeners in the vicinity of Boston keep bees that they may secure the perfect fertilization of their fruit and plants.

Mr. A. I. Root found a green-house in New York where bees were kept at work all winter to save the otherwise laborious and expensive mode of hand-fertilization. The experience of the Australians with red clover, and the fact that they imported bumble-bees to secure its fertilization, is no doubt familiar to you all.

Darwin long ago made mention of the fact that the bees were necessary to a good crop of clover seed. He threw out the following suggestions why better clover seed could be secured near a city:

The greatest enemy to the bumble-bee is the field mouse. If the mice are kept at bay the bumble-bee will flourish. In cities more cats are kept than in the country, and they are the enemies of the mice. Some fearless wag has suggested that a city which contains an unusual number of maiden ladies, who are said to favor cats, will be still better than one without them. The inference is, if you want to secure plenty of red clover seed, go near a city where there is a superabundance of old maids!

Some one may ask why this mixing up of the pollen of various plants will not create great confusion in the vegetable kingdom, by the production of hybrids, etc. It was observed by Aristotle more than 2,000 years ago that bees visit the flowers of the same species as long as they can. This has been confirmed by the observations and writings of many in modern times. The bees work only on one kind of a flower at a time.

### INSECT FERTILIZATION OF BLOSSOMS.

I am well aware that the wind and other insects are a great aid to plants, by way of securing cross-fertilization, but at the same time it is quite plain that if it were not for the honey-bee, many trees and plants would bear no fruit at all. Such fruits as cherries, apples, pears, peaches, raspberries, and strawberries, are almost entirely dependent upon the bees for perfect pollination. In the case of very early cherries and apples there are no other insects flying. When it is too cold and stormy for the bees to get out during the flowering of these fruits, we always have a very poor crop. This would lead one to conclude, if we had no other evidence, that the bees have something to do with the production of a good crop. Therefore I think we have established the fact that the bees are a benefit to the fruit-grower, and in many ways aside from the production of honey and wax.

It is no doubt true that if more bees were kept, there would be larger and better crops in many an orchard and garden. If it were not for the bee, many a beautiful flower would fall to the ground and perish without having produced any fruit. In view of these facts we may well change the language of the poet, and make him say:

> How doth the little, busy bee
> Improve each shining hour,
> While gathering honey every day
> To fertilize each flower.

### DO BEES INJURE FRUIT?

We now come to the question of vital import, *Do bees ever injure fruit?*

I am not ignorant of the fact that very much has been laid to the charge of the bees. We are sometimes told that bees eat grapes as ravenously as chickens eat worms, never stopping until they have destroyed whole vineyards. We occasionally hear of them devouring crates of peaches and various other fruits. We have not had any report yet as to their capacity for eating corn and pumpkins; and the vines and trees after they have made way with the fruits thereon; but then this is an age of discovery, and we cannot tell what may come to light. I am aware that bee-keepers sometimes make claims that they cannot substantiate with the facts.

As able and reliable a writer as Prof. Cook, says in his "Manual," that "*Bees never bore for nectar, but seek or even know only of that which is fully exposed.*" However, he modifies this statement by saying that Dr. C. V. Riley feels sure that bees are sometimes thus guilty.

The prevailing testimony seems to be that as a general thing bees do not perforate flowers, yet a number of scientific investigators claim that they do, and a bee-keeper of no less repute than Mr. A. I. Root says that he saw the Italians bite through the spur of a wild touch-me-not. While this is true, yet it remains a question whether these openings prove to be a real injury to the flowers, except that they enable the insect to get the nectar of the flower without securing its pollination, and thus the flower proves to be sterile, not because the bee visited it, but because it did not reach the nectar in the way that made it do for the flower

what it could not do for itself without the aid of the bee.

So that perhaps Prof. Cook is not far out of the way when he says, "That bees ever injure blossoms, and thus effect damage to the fruitage of such plants as buckwheat—or to any plants, as is sometimes claimed—is utterly absurd, and without foundation."

While we may not all indorse this strong language, yet I think you will all agree with me in the statement that, on the whole, the busy bee is a great benefit to the flower, and rarely, if ever, an injury. But the main ground of complaint has not been that bees injured the flowers, but the fruit itself, especially the grape. Men have been so certain of this that the bees and grapes have had one or two lawsuits, but I believe that so far as heard from the bees are yet "on deck."

### EXPERIMENT WITH BEES AND GRAPES.

You may not all be aware of the fact that the government has a special agent who is employed to make experiments in apiculture in all of its ramifications. This man, Prof. McLain, has no "axes to grind," and so we are more likely to get unbiased statements from him than from any other source. Under special instructions he has been making extensive experiments in this direction, and has made two or more elaborate reports on the subject.

In one of them he says: "I have repeated my experiments of last year for testing the capacity of bees to injure fruit." He confined two colonies of Italian bees, two of hybrids, and two of Syrians, in a house and endeavored, by heat, etc., to bring about all the conditions of a severe drouth. He says:

> The bees were repeatedly brought to the stages of hunger, thirst, and starvation, the test continuing for 40 days. I obtained 13 varieties of choice grapes, and every inducement and opportunity was afforded the bees to appease their hunger and thirst by attacking the fruit which was placed before them. Mark this: Some of the bunches of grapes were dipped in syrup and hung in the hives between the combs, some placed before the hives on plates, and grapes were suspended in clusters from the posts and rafters. The bees lapped and sucked all the syrup from the skins, leaving the berries smooth.
>
> They daily visited the grapes in great numbers, and took advantage of every crack in the epidermis or opening at the stem, appropriating to their use every drop of juice therefrom, but they made no attempt to grasp the cuticle with their mandibles or claws. I removed the epidermis carefully from dozens of grapes of various kinds, and placed them on plates before the hives. The bees lapped up all the juice on the outside of the film surrounding the segments of the grape, leaving this delicate film dry and shining, but through and beyond this film they were unable to penetrate.
>
> I punctured the skins of grapes of all kinds by passing needles of various sizes through the grape, and placed these before the bees. The needles used were in size from a fine cambric needle to a jacking needle. The amount of juice appropriated was in proportion to the size of the opening in the skins and the number of segments of the grape broken. The same was true in the case of grapes burst from over-ripeness. Bees are not only unable to penetrate the epidermis of grapes, but they also appear to be unable, even when impelled by the direst necessity, to penetrate the film surrounding the berry even after the epidermis is removed. Grapes so prepared, without exception, lay before the hives until dried up.

He further says that clusters of sound grapes which he hung in hives with strong colonies for 15 days, remained sound and unbroken at the end of the time. He then stopped the entrances of hives containing strong colonies by pushing sound grapes into the openings, and confined the bees in the hives in this way for days in succession, and the skin of the grapes was not broken. He sums up his report by saying:

> During the last season I made many visits to vineyards, and my observation and experience with bees in confinement, and those having free access to vineyards, furnish abundant proof to convince me that bees do not and cannot under any circumstances injure sound fruit.

This has also been my own experience. One year I had 150 colonies of bees, and harvested a fair crop from two acres of grapes that grew along by the side of my apiary, just over the fence, and we had no trouble with the bees whatever.

Yet I do know that there are some seasons when it is very dry, and the grapes are left on the vines until they are dead ripe, for the purpose of making wine out of them, when the bees fairly swarm in the vineyard, and become almost, if not entirely, a nuisance for the time. But even then they only work on the grapes that burst from over-ripeness, or that have been torn open by birds or other insects.

But on such an occasion the grapes are as much of an injury to the bees as the bees are to the grapes, and it is simply a question of previous location as to who should move or be declared a nuisance.

Any one who will examine carefully the jaws or mandibles of a worker-bee will see at once that they are not made for cutting hard, tough substances, and this is one of the very best evidences that they are not in the habit of doing it; for in the entire economy of nature we find all organs adapted to the work they are required to perform. It is true that a bee's mandibles are very strong, and they can press very hard with them, and they use them constantly in molding wax and propolis; but they are not sharp, are not toothed, nor made in any way that would indicate they were designed for cutting.

### BEES NEVER INJURE SOUND FRUIT.

In view of all these facts, I am forced to take the position that bees never injure sound fruit. However, I am conscious that notwithstanding I, with many others, have reached this conclusion, yet we will continue to hear complaint against the bees for a long time to come, and much strife and contention will yet arise before this vexed question is finally settled.

This leads me to the question of a remedy. A meeting like we had here last year, or the one at Columbus to which I referred, is one of the best remedies known to me. Let those who are interested get together and discuss this question in a friendly way, and then get at all of the facts in the case, and much that now seems dangerous will, in my opinion, be found to be perfectly harmless. In a word, my remedy is *education*. Knowledge is always power, and the saying will be especially true in this case—*learn more at first hand!*

I feel that I have made a very hasty and imperfect survey of this subject; it is too large to be treated fully in one essay. Yet I trust I have presented some facts, standing in the presence of which Nature seems larger than before; and we find ourselves seeing with keener eyes, harmony and order come out of what seemed to be only chaos, confusion, and discord. We hear again, with new meaning, the angels' song of "Peace on earth, good will to men."

In a world where there is room enough for *all*, all should be willing to give *all* the benefit of that room. So let us then, horticulturists and bee-keepers, join in the poet's song of—

### WELCOME TO THE HONEY-BEE.

"Come, honey-bee, with thy busy hum,
To the fragrant tufts of the wild thyme—come,
And sip the sweet dew from the cowslip's head,
From the lily's bell, and the violet's bed,
Come, honey-bee:
There is spread for thee
A rich repast in wood and field;
And a thousand flowers
Within our bowers,
To thee their sweetest essence yield.

"Come, honey-bee, to our woodlands—come;
There's a lesson for us in thy busy hum.
Thou hast treasure in store in the hawthorn's wreath,
In the golden-broom, and the purple heath;
And flowers less fair
That scent the air
Like pleasant friends, drop balm for thee;
And thou winnest spoil
By thy daily toil,
Thou patient and thrifty and diligent bee."

Permit me to make one remark in conclusion that does not relate exactly to my subject, but rightly grows out of it, I think. In religious matters I am

inclined to be very liberal, and give the utmost liberty to others; yet it seems to me that no man can study carefully the part the bee plays in Nature, and kindred facts, without being forced to the conclusion that there is a "Power not ourselves" behind Nature "which makes for righteousness," whether he agrees with me and call that power God or, not. To me all this is the manifestation of an Infinite Father, and I would it might be to all men.

St. Joseph, Mo.

## MINNESOTA.

### The Poorest Season in 21 Years —Nectar Secretion.

*Written for the American Bee Journal*

BY C. THEILMANN.

So far this has been the poorest season for honey that I have experienced in 21 years of my bee-keeping. I have as yet not one pound of surplus honey, and only one swarm (which I hived for an experiment), though I had a number of swarms which I put back, as they could not make their living without being fed.

I had to feed all of my bees (225 colonies) up to the forepart of July, when linden came into bloom; they got a little more than their living on it, and have gained but little in stores up to the present, but most of the hives are full of bees and brood. They have all the way from almost none to 15 pounds of honey in the brood-chamber.

Buckwheat and many fall flowers are in bloom, but there seems to be but a slow gain of honey in the hives, while the bees, seemingly, are hard at work, with apparently the best of weather for honey-secretion for the past two weeks, in which time we had a number of nice rains; the ground is now thoroughly soaked, and if frost keeps off for three or four weeks, we may have a honey-flow yet; but it is quite cool. This forenoon the thermometer showed 36° above zero; yesterday 40°, and at noon the bees dropped down before the hives, stiffened with cold, and many perished.

Almost all the bee-keepers that I have met would gladly sacrifice their surplus if their bees would only get enough for winter stores. Last year this county produced about 150,000 pounds of surplus honey, and this year I do not think that there will be 500 pounds, as I have heard of only one man who has one case of finished honey in the whole county!

This county has never failed heretofore to yield a surplus crop; but we have never had such extreme weather. The continued cold and wet weather in June, and the high floods, followed by the big storm which capsized the Sea Wing, in Lake Pepin, have done great damage to the fields and honey-producing plants and trees. Small grain was badly blown down, and in some streaks it was totally destroyed by hail. Many of the honey-plants looked as if the fire went through them, and were crippled and stunted.

That storm, more than any one that I have ever noticed, has shown the fatality to the production of nectar. The electricity in the atmosphere, when exploded in connection with heavy rain, seems to destroy the nectar-giving properties, as honey-secretion stopped after the storm almost entirely for a number of days. It is clear that the atmospheric conditions have more to do with a honey-crop than the flora itself.

This brings to mind another question, namely: Do not these very same conditions bring forth bark or plant lice—and *vice versa?* Or is it that they bring forth honey-dew, and the lice follow?

One thing is shown plainly by this season's observation, namely: We have not seen or heard of any honey-dew, nor bark or plant lice in any of the localities where there is no honey, or where the non-producing atmospheric conditions were absent. This clearly shows that these conditions and real honey, honey-dew, and plant-lice are in close proximity, which science has not yet unveiled.

Theilmanton, Minn., Aug. 22, 1890.

## AGE OF BEES.

### How Long Queens, Drones and Worker-Bees Live.

*Written for the American Rural Home*

BY G. M. DOOLITTLE.

Nothing in the bee-business has given me more pleasure in the past than experimenting to ascertain the different ages of bees, and the different offices they perform at certain ages, when in a normal condition.

When these conditions are not complied with, the colony is thrown out of balance, and in that unbalanced condition we find that bees will feebly perform any office of the hive till they can arrange matters normally again. Then it is that we find very young bees going to the fields, when they will bring less than one-half the load that the bee over 16 days old will carry; old bees will rear queens which are not half the value of those reared by the younger or nurse bees, and some will even lay eggs, while this office is usually restricted to the queen.

In these experiments, I have found that queens reared under the most favorable circumstances attain the average age of four years, even under the "forcing process" now used to get all the bees possible in the hive at all times, which is recommended by nearly all bee-keepers of the present day.

On one occasion I had one queen that lived and did good work till she was nearly six years old, laying prolifically until within about three months of the time of her supersedure; while several have lived to be about five years old.

The worker-bee rarely attains to a longer life than 45 days, during the months of June, July, August and September, while those hatched in September live until the next May and June, if not injured by our winters, their life being prolonged above the 45 days, just in proportion to the work they do, or the amount of hardship they are required to undergo. In no instance can a worker-bee survive a full year.

The life of the drone is about the same as that of the worker, under favorable conditions, but a very precarious life he lives; for, if a scarcity of honey prevails, and the bees are not fed by the apiarist, the drones are unmercifully driven from the hives, or killed by the workers. I have seen it stated that the drones do not live one-half the time the workers do, the proof of which was the writer's experiments with a nucleus colony. This individual should know that drones have the privilege of entering, unmolested, any hive that allows its own drones to remain, and that if they are driven from one hive, they are allowed to enter another which is retaining its drones. Such has been my experience for years.

A nucleus having a queen just fertilized has no more need of drones, and persecutes them until they leave; or if they persist in staying, kills them. With an isolated hive, my position, that drones live about 45 days during the working season, can be proven.

Many seem to think that drones never live over the winter, which is the rule, though not always the case, for at two different times my hives have been so well supplied with honey during the fall and winter, that the bees did not seem to realize any need of retrenching, so kept their drones, which were flying every fine day during the fall and winter, the excess of honey causing the bees to allow them to live as long as life held out. It was really amusing to hear their merry hum from many hives on warm days

during February and March. As the pleasant days of April came on, they gradually grew less and less, until all were gone about the middle of that month.

Borodino, N. Y.

## CONVENTION DIRECTORY.

1890. *Time and place of meeting.*

Sept. 10.—Nebraska State, at Lincoln, Nebr.
J. N. Heater, Sec., Columbus, Nebr.

Sept. 10.—Ionia County, at Ionia, Mich.
H. Smith. Sec., Ionia, Mich.

Sept. 13.—Susquehanna Co., at Springville, Pa.
H. M. Seeley, Sec., Harford, Pa.

Oct. 8.—S. W. Wisconsin, at Platteville, Wis.
B. Rice, Sec., Boscobel, Wis.

Oct. 15.—Central Michigan, at Lansing, Mich.
W. A. Barnes, Sec., Lansing, Mich.

Oct. 29-31.—International American, at Keokuk, Ia.
C. P. Dadant, Sec., Hamilton, Ills.

☞ In order to have this table complete, Secretaries are requested to forward full particulars of the time and the place of each future meeting.—THE EDITOR.

### International Bee-Association.

PRESIDENT—Hon. R. L. Taylor..Lapeer, Mich.
SECRETARY—C. P. Dadant.....Hamilton, Ills.

### National Bee-Keepers' Union.

PRESIDENT—James Heddon ..Dowagiac, Mich
SEC'Y. AND MANAGER—T. G. Newman, Chicago

## SELECTIONS FROM OUR LETTER BOX

### Heart's-Ease and Golden-Rod.

We had a fine shower of rain here last Saturday, and my bees are booming on heart's-ease and golden-rod. I do not see many bees on the golden-rod until nearly noon, but they are busy on the heart's-ease as soon as the sun begins to warm up thoroughly. I have secured about 25 pounds of extracted honey up to date per colony, and if the weather continues good for the next two weeks, I can report better.

W. H. MARTIN.

Elkhorn, Nebr., Aug. 26, 1890.

### Bee-Keeping in Nebraska.

Bees in central and western Nebraska have suffered severely this summer on account of excessive drouths. This extends some little distrance east of Columbus, beyond which I think that bees and crops have suffered less, and more favorable reports will be given from those sections.

Owing to melilot and alfalfa clover (of which I have 50 acres on my own farm), I am happy to report 600 pounds of extracted, and nearly 100 pounds of comb honey, and the brood-chambers full of choice winter stores; while other bee-keepers report starvation and robbing. To-day bees did not attempt to touch honey exposed to them, because melilot and alfalfa gave them a more palatable repast than that. The above report is of 12 colonies for extracted, and of but 3 colonies for comb honey.

I have 12 colonies more, which have done nothing as far as surplus is concerned, but these weak colonies are strong now, and have all the winter stores they need, and more too. So they may give me considerable surplus yet, provided we get sufficient rain.

The extensive beet-sugar factory within 240 rods of my apiary, will be in full blast very soon, and I fear will seriously injure my bees, and destroy my apiary. I will report later as to the effect that this beet-sugar factory will have on my bees.

WILLIAM STOLLEY.

Grand Island, Nebr., Aug. 27, 1890.

### Working on the Cotton Bloom.

Since July 10, bees in this locality have done so well, I thought a notice might be of interest to some of the many readers of the BEE JOURNAL. The cotton bloom seems to be outdoing itself this year. Good colonies are quite rich with a honey of light-amber color, and a splendid flavor. I wonder if our cotton will not rival Northern white clover? If we get the usual after crop, there will be no ground for complaint. I will report later.

A. L. BEACH.

Pineville, N. C., Aug. 19, 1890.

### Gathering Honey Rapidly.

For the last ten days bees have been storing honey, and finishing up sections that were left unfinished at the close of the linden bloom. Abundant rains of the last few weeks have secured for us already a fair fall crop of honey, and bees now have their hives chock-full of honey and young bees. I had one fine swarm come off last week, and expect more shortly. Generally we save a lot of empty combs to hive late swarms on, when there is honey enough in the fields to bring on swarming. There will be honey enough for new swarms to obtain enough for wintering purposes, and to-day my 61 colonies are just humming, as though it was during the linden bloom, and I presume it will last all through the month of September. J. M. YOUNG.

Plattsmouth, Nebr., Aug. 25, 1890.

### My Experience with Bees.

I wintered 6 colonies of hybrid bees in this way: I placed a large box on each hive, allowing a space of about 5 inches, which I packed with chaff and sawdust. I used "Hill's device" over the brood-nest, and then a burlap cushion filled with chaff. All wintered well, and came out in a healthy condition. Owing to a very wet, cold spring, breeding was late, and then we had very hot weather, which dried up the nectar in the flowers. The weather is fine now, and the bees are doing fairly well on the autumn flowers. I had 9 colonies from 6 colonies, spring count. One colony swarmed on June 30, and then again on July 3; they returned to the hive, and came out again on July 5; then another swarm came off on July 6, and this swarm also went back, and then came off on July 8, to stop; and then another small swarm later on. Is it not very unusual for one colony to cast four swarms in so short a time? I have about 30 pounds of surplus honey, which is very small compared with last year's work. Other bee-keepers in this district report a poor year.

CHAS. W. DICKSON.

Stellarton, Nova Scotia, Aug. 25, 1890.

**Handling Bees.**—This is the title of a nice pamphlet containing 28 pages and a cover, published by Chas. Dadant & Son. It is a chapter from their book, Langstroth Revised, and is an excellent thing for beginners. Price, 8 cts. For sale at this office.

## HONEY AND BEESWAX MARKET.

CHICAGO, Aug. 28.—Comb honey is held very firmly this week, and the prices for white in pound sections range from 16@17c, and some fancy at 18c, but the bulk of the sales are at 17c. Demand is quite good, and more could be sold than is coming. Extracted, 6@8c; there are free offerings of California at 6@7c. R. A. BURNETT, 161 S. Water St.

NEW YORK, Aug. 25.—New comb honey is now arriving, and finds ready sale. We quote: Fancy white 1-lbs. in paper boxes, 16@18c; the same glassed or unglassed, 15@17c; the same, 2-lbs., 14@15c; off-grades, 1-lbs., 13@14c; 2-lbs., 11@12c. Extracted, basswood, 7½@8c; California, 6½@7c; Southern, 65@70c per gallon.

HILDRETH BROS. & SEGELKEN,
28-30 West Broadway.

MILWAUKEE, Aug. 23.—This market now offers good encouragement for honey. The old stock of white comb is all gone, and new, choice, 1-lbs. will meet a sweet reception. We quote 1-lb. choice white, 15@16c; good white 1-lbs., 14@15c; fair white 1-lbs., 13@14c; choice 2-lbs., 13@14c. Extracted in barrels, choice white, 7@8c; in kegs and tin, 8@8½c. Beeswax, 26@30c.

A. V. BISHOP, 142 W. Water St.

KANSAS CITY, Aug. 22.—Receipts of comb honey are light, and demand good, at 14@15c for white 1-lbs. No 2-lbs. or dark comb in the market. Very little demand for extracted at present; white, 6½@7c; dark, 5@6c. No beeswax in market.

CLEMONS, MASON & CO.,
Cor. 4th and Walnut Sts.

CHICAGO, Aug. 21.—New honey arriving very slowly, demand active, and all receipts are taken promptly. We quote: White clover 1-lbs., 16@18c.; 2-lbs., 14@15c.; dark 1-lbs., 11@12c; 2-lbs., 9@10c. Extracted meets with quick sale, values ranging from 6½@7¼ cts., depending upon quality and style of package. Beeswax, 28@30c.

S. T. FISH & CO., 189 S. Water St.

KANSAS CITY, August 6.—Demand is good for the new crop, and receipts are very light. White 1-lbs., 15c.; 2-lbs., 13@14c. Dark 1-lbs. 12@13c.: 2-lbs., 12c. Extracted, white, 7c.: dark, 5@6c.

HAMBLIN & BEARSS, 514 Walnut St.

DETROIT, Aug. 12.—Very little new comb honey in the market, and it is selling at 14@15c. Extracted, 7@8c. Beeswax, 26@27c.

M. H. HUNT, Bell Branch, Mich.

DENVER, Aug. 7.—Old honey all gone. New crop is arriving freely. Prospect good for a fall crop. We quote: 1-lbs., 14@16c. Extracted, 6@8c. Beeswax, 20@25c.

J. M. CLARK COM. CO., 1517 Blake St.

BOSTON, Aug. 15.—New honey is coming in and we are selling at 18c. Extracted, 7@8c. Beeswax, 30c. for fancy yellow.

BLAKE & RIPLEY, 57 Chatham Street.

CINCINNATI, Aug. 20.—Good demand for comb and extracted honey. Arrivals are insufficient for the demand. We quote best white comb at 14@16c. Extracted at 5@8c. Beeswax is in fair demand at 24@26c on arrival for good to choice yellow.

C. F. MUTH & SON,
Corner Freeman & Central Aves.

**Trial Subscribers.**—In order to get as many as possible to read the AMERICAN BEE JOURNAL, we will take Trial Subscribers from the time the subscription is received until the end of 1890 for 25 cents each. Or for any one sending us $1.00 for 1891, we will give the numbers for this year *free* from the time the subscription is received at this office—so the sooner they subscribe the more they will get for the money.

**Clubs** of 5 for $4.00 to any addresses. Ten for $7.50, if all are sent at one time.

AMERICAN BEE JOURNAL
ESTABLISHED IN 1861 — OLDEST BEE PAPER IN AMERICA

ALFRED H. NEWMAN,
BUSINESS MANAGER.

# Business Notices.

☞ Subscribers who do not receive their papers promptly, should notify us at once.

☞ Send us *one new* subscription, with $1.00, and we will present you with a nice Pocket Dictionary.

☞ Red Labels are nice for Pails which hold from 1 to 10 lbs. of honey. Price $1.00 per hundred, with name and address printed. Sample free.

☞ Calvert's No. 1 Phenol, mentioned in Cheshire's Pamphlet on pages 16 and 17, as a cure for foul brood, can be procured at this office at 25 cents per ounce, by express.

☞ Send us *two new* subscriptions, with $2.00, and we will present you with a "Globe" Bee-Veil for your trouble. (See the fuller notice in the advertising columns.)

☞ The date on the wrapper-label of this paper indicates the end of the month to which you have paid. If that is past, please send us a dollar to advance that date another year.

☞ Please send us the names of your neighbors who keep bees, and we will send them sample copies of the BEE JOURNAL. Then please call upon them and get them to subscribe with you.

☞ Any of the Political Dollar Weekly Newspapers will be clubbed with our JOURNAL at $1.85 for the two; or with both our HOME JOURNAL and BEE JOURNAL for $2.25 for all three papers.

☞ As there is another firm of "Newman & Son" in this city, our letters sometimes get mixed. Please write *American Bee Journal* on the corner of your envelopes to save confusion and delay.

☞ Systematic work in the Apiary will pay. Use the Apiary Register. Its cost is trifling. Prices:

For 50 colonies (120 pages) .....$1 00
" 100 colonies (220 pages) ..... 1 25
" 200 colonies (420 pages) ..... 1 50

☞ When talking about Bees to your friend or neighbor, you will oblige us by commending the BEE JOURNAL to him, and taking his subscription to send with your renewal. For this work we will present you with a copy of the Convention Hand Book by mail, postpaid. It sells at 50 cents.

☞ A "Binder" made especially for the AMERICAN BEE JOURNAL, and lettered in gold, makes a very convenient way of preserving the copies of the BEE JOURNAL as fast as they are received. We offer it, postpaid, for 60 cents; or as a premium for *two new* subscriptions, with $2.00. It cannot be mailed to Canada.

## CLUBBING LIST.

**We Club** the *American Bee Journal* for a year, with any of the following papers or books, at the prices quoted in the **LAST** column. The regular price of both is given in the first column. One year's subscription for the American Bee Journal must be sent with each order for another paper or book:

| | *Price of both.* | *Club* |
|---|---|---|
| The American Bee Journal..... | $1 00.... | |
| and Gleanings in Bee-Culture.... | 2 00.... | 1 75 |
| Bee-Keepers' Guide..... .... | 1 50.... | 1 40 |
| Bee-Keepers' Review..... | 1 50.... | 1 40 |
| The Apiculturist..... | 1 75.... | 1 65 |
| Bee-Keepers' Advance ..... | 1 50.... | 1 40 |
| Canadian Bee Journal..... | 2 00 ... | 1 80 |
| The 7 above-named papers ..... | 5 25.... | 5 00 |
| and Langstroth Revised (Dadant) | 3 00.... | 2 75 |
| Cook's Manual (1887 edition) | 2 25.... | 2 00 |
| Quinby's New Bee-Keeping. | 2 50.... | 2 25 |
| Doolittle on Queen-Rearing. | 2 00.... | 1 75 |
| Bees and Honey (Newman).. | 2 00.... | 1 75 |
| Binder for Am. Bee Journal. | 1 60.... | 1 50 |
| Dzierzon's Bee-Book (cloth). | 3 00.... | 2 00 |
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| Farmer's Account Book..... | 4 00.... | 2 20 |
| Western World Guide ..... | 1 50.... | 1 30 |
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| A Year Among the Bees .... | 1 50.... | 1 35 |
| Convention Hand-Book..... | 1 50. .. | 1 30 |
| Weekly Inter-Ocean..... | 2 00.... | 1 75 |
| Toronto Globe (weekly). .... | 2 00.... | 1 70 |
| History of National Society. | 1 50.... | 1 25 |
| American Poultry Journal.. | 2 25.... | 1 50 |
| The Lever (Temperance) .... | 2 00.... | 1 75 |

**Do not** send to us for sample copies of any other papers. Send for such to the publishers of the papers you want.

## Convention Notices.

☞ The Southwestern Wisconsin Bee-Keepers' Society, will meet on Oct. 8, 1890, at the residence of E. France, Platteville, Wis. B. RICE, Sec.

☞ The fall meeting of the Central Michigan Bee-Keepers' Association, will meet in the Pioneer Rooms, Capitol Building, Lansing, Mich., on Wednesday, Oct. 15, 1890, to commence at 10 a.m.
W. A. BARNES, Sec.

☞ The Capital Bee-Keepers' Association will meet in the Supervisors' Room of the Court House, in Springfield, Ills., at 10 o'clock, a.m., on Sept. 26, 1890. Come, and let us have a good time.
C. E. YOCOM, Sec.

☞ The Susquehana County Bee-Keepers' Association, will meet at Springville, Pa., on Saturday, Sept. 13 1890, at 10 a.m. All are invited to attend. I would request every one in the county, who has one or more colonies, to send me their report for the season—number of colonies in the spring, number of increase, pounds of comb honey, of extracted —and of beeswax.
H. M. SEELEY, Sec., Harford, Pa.

☞ The Nebraska State Bee-Keepers' Association will meet in convention in the Bee and Honey Hall, State Fair Grounds, at Lincoln, Nebr., on Wednesday evening, September 10, 1890. Mr. E. Whitcomb, Superintendent of the Bee and Honey Department of the State Fair, will be on hand the entire week of the Fair. He especially desires that every bee-keeper shall make this department his head-quarters. Any honey, or appliances in its production, sent in his care, charges paid, will be properly placed on exhibition. J. N. HEATER, Sec.

**Bee-Keeping for Profit,** by Dr. G. L. Tinker, is a new 50-page pamphlet, which details fully the author's new system of bee-management in producing comb and extracted honey, and the construction of the hive best adapted to it—his "Nonpareil." The book can be had at this office for 25 cents.

**Send us the Names** and addresses of any of your friends upon whom you desire to call, to get their subscriptions, and we will immediately send them each a sample copy. In this way you can readily get them for a club.

## CATARRH.

### CATARRHAL DEAFNESS—HAY FEVER.

**A New Home Treatment.**

Sufferers are not generally aware that these diseases are contagious, or that they are due to the presence of living parasites in the lining membrane of the nose and eustachian tubes. Microscopic research, however, has proved this to be a fact, and the result of this discovery is that a simple remedy has been formulated whereby catarrh, catarrhal deafness and hay fever are permanently cured in from one to three simple applications made at home by the patient once in two weeks.

N. B.—This treatment is not a snuff or an ointment; both have been discarded by reputable physicians as injurious. A pamphlet explaining this new treatment is sent free on receipt of stamp to pay postage, by A. H. Dixon & Son, 337 and 339 West King Street, Toronto, Canada.—*Christian Advocate.*

Sufferers from Catarrhal troubles should carefully read the above.
50E26t 1m1y.

**Chapman Honey-Plant Seed.**—This plant has been commended by some of the most experienced bee-keepers in America, as being "a most valuable acquisition to the list of bee-forage plants." The seed may be scattered in waste places, or it may be sown in drills or hills like onion seed. We can furnish the seed, post-paid, at the following prices: Single ounce, 40 cents; 4 ounces, $1.00; 10 ounces, $2.00; or one pound for $3.00.

**A Nice Pocket Dictionary** will be given as a premium for only **one new** subscriber to this JOURNAL, with $1.00. It is a splendid little Dictionary—just the right size for the pocket. Every school boy and school girl, as well as everybody else, should own and use it. Price, **25 cents.**

We club the ILLUSTRATED HOME JOURNAL (price 50 cts.) with the AMERICAN BEE JOURNAL for one year for only $1.35. You cannot afford to do without either—the one as an aid to practical bee-keeping, and the other as an invaluable literary and home periodical for the whole family.

# Advertisements.

WE have had splendid success this season. We believe we have filled all orders up to date, and can now send **Carniolan & Italian Queens** by return mail, providing you do not all order at once. We shall have about 100 of those **Beautiful Yellow Carniolan Queens** ready to ship during September—a new strain of bees possessing all the desirable points of Carniolans, with color added. Price of all Queens, **$1.00** each, by mail.

**E. L. PRATT, PRATT BEE-FARM,**
3Atf **Marlboro, Mass.**

## Prices Reduced.

SELECT TESTED QUEENS, $1.25. Warranted Queens, 75 cents—6 for $4.00. Make Money Orders payable at Nicholasville, Ky.
14Etf J. T. WILSON, Little Hickman, Ky.

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## A FOLDING PAPER BOX

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## PROTECTING SECTIONS OF HONEY.

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All boxes printed with your Business Card on front if desired.

Samples and Prices on application.

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# SPECIAL DISCOUNT

## ON HIVES.

IN order to keep our factory running during the fall and winter months, we will make a discount of **10 per cent.** on all orders for Hives received before Jan. 1, 1891, and after that date, until March 1, we will make a discount of **5 per cent.** from our Catalogue prices.

The experience of the last season should prompt every bee-keeper to have his supply of Hives, etc., on hand before the season commences, and avoid the rush.

**THOS. G. NEWMAN & SON,**

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# HANDLING BEES

A **PAMPHLET,** treating of the taming and handling of bees. Just the thing for beginners. It is a chapter from **"The Hive and Honey-Bee, revised."** Price, **8 cts.** Advice to beginners, Circulars, &c., free.

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# Muth's Honey Extractor,

**Perfection Cold-Blast Smokers,**

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P. S.—Send 10c. for Practical Hints to Bee-Keepers.

# LOOK HERE!

**TESTED Italian Queens,** $1.00 each; Untested, 75c.; 12-pound Shipping Cases in flat, per 100, $6.00; 2x9 glass for same, per 100, 70c.; per 500, $3.00. Price-List free.

Address, **J. M. KINZIE,**

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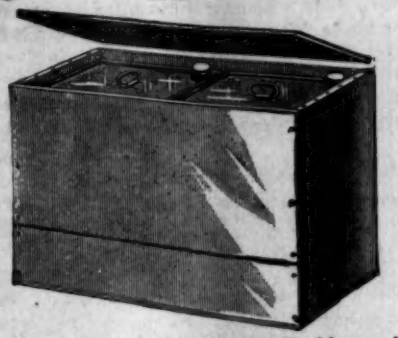
# SQUARE HONEY CANS



The above illustration shows the 60 pound SQUARE HONEY CANS which are becoming quite popular for shipping extracted honey.

They are enclosed in a solid case of wood, and the boxes contain either one or two Cans as may be preferred.

We can furnish them at the following prices, with a 1⅛-inch Screw Cap in the corner of each Can.

For the convenience of digging out candied honey, we can furnish these Cans with an additional four-inch Screw Cap for 5 cents extra on each Can.

| | | | |
|---|---|---|---|
| 1 Single Can | (boxed) | $ | .45 |
| 12 " | Cans | | 5.00 |
| 100 " | " | | 40.00 |
| 1 box of two Cans | | | .75 |
| 12 boxes | " | | 8.40 |
| 100 " | " | | 65.00 |

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## Barnes' Foot-Power Machinery.

Read what J. I. PARENT, of CHARLTON, N. Y., says—"We cut with one of your Combined Machines, last winter 50 chaff hives with 7-in. cap, 100 honey-racks, 500 broad frames, 2,000 honey-boxes and a great deal of other work. This winter we have double the amount of bee-hives, etc., to make and we expect to do it with this Saw. It will do all you say it will." Catalogue and Price-List Free. Address, W. F. & JOHN BARNES,

45Ctf No. 196 Ruby St., Rockford, Ill.

*Mention the American Bee Journal.*

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**THE NATIONAL - - - - - -**

**- - TEMPERANCE NEWSPAPER.**

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YOU SHOULD READ IT.

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## To New Subscribers, Only 50c a Year.

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Terms Cash, or satisfactory security, on time. Have a T-Tin Machine—capacity, 500 complete Tins in an hour; a Given Press, horse power, Saws, Sheeting outfit, etc., etc., and 50 colonies of Italian Bees. Will quote prices or receive bids on whole or part, by mail.

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(Successor to E. S. Armstrong.)

35A2t *Mention the American Bee Journal.*

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**JUST the thing** needed to create a **demand** for HONEY at home. Bee-keepers should scatter it freely. It shows the uses of Honey for Medicine Eating, Drinking, Cooking, for making Cosmetics Vinegar, etc.; also uses of BEESWAX. Price, 5 cts.; 25 copies for $1.10; 50 copies, $1.70; 75 copies, $2.30; 100 for $2.90. The foregoing are POSTPAID prices: following are prices when sent by express or freight: 100 for $2.50; 500 for $10.00; 1,000 for $15.00. The Bee-Keeper's CARD will be printed on the first page without extra cost, when 25 or more are ordered at one time. Address,

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# $3.00 WILL BUY.

☞ I will close out my Apiary of over 100 Colonies of Bees in fine condition, at $3 per Colony—good Colonies, good Hives, with enough honey to winter on. Address,

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# THE "REVIEW."

SOME OF THE TOPICS IT HAS DISCUSSED.

**"The Production of Comb Honey,"** was the special topic of the April number.

**"How to Raise Extracted Honey,"** was discussed in the May issue.

**"Comforts and Conveniences for the Apiary,"** were named and described in June.

**"From the Hive to the Honey Market,"** was the topic of the July issue.

**"Marketing," Will be the Special** topic of the August number.

**The "Review" is Published** monthly, at 50 cts. a year. Send for samples (free) and see if you can afford to be without it.

**Address Bee-Keepers' Review,**

W. Z. HUTCHINSON, Ed. & Prop. Flint, Mich.

23Ctf *Mention the American Bee Journal*

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**Beeswax.**—We will pay **25 cents** per pound, in Cash, for Yellow Beeswax, delivered here.

☞ To avoid mistakes, the name of the shipper should always be on each package.

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# Tin Pails for Honey.

THESE Pails have full covers, and are excellent for selling Honey in the Home Market; and after the Honey granulates in them, it can be shipped anywhere with perfect safety. All sizes have a bail, or handle, and when empty are useful in every household.

The engraving shows STRAIGHT TIN PAILS, of which there are 3 sizes, holding respectively 3, 5 and 10 lbs. of Honey. Assorted Samples of the 3 sizes will be sent by express for 40 cts. In quantities, the prices are:

| | Per doz. | Per 100 |
|---|---|---|
| Gallon...holds 10 lbs. | $1.80 | $12 00 |
| ½-Gallon, holds 5 lbs. | 1.50 | 9.00 |
| Quart, holds 3 lbs | 1.20 | 7.00 |

The second engraving represents THE TAPERING TIN PAILS—made heavier and stronger than those with straight sides. The covers are deeper, and the top-edge of the Pail is doubled over, making it smooth and convenient to handle. Of the Tapering Pails there are five sizes, viz: 1-lb., 4-lb., 7-lb., 13-lb., and 25-lb. Assorted Samples of these will be shipped by express for 75 cents. In quantities, the prices are as follows:

| To hold | 1-lb. | 4-lbs. | 7-lbs. | 13-lbs. | 25-lbs. |
|---|---|---|---|---|---|
| Per dozen, | $ .75 | $1.25 | $ 1.50 | $ 2.00 | $ 3.25 |
| Per 100, | 5.00 | 8.00 | 10.00 | 14.50 | 23.00 |

**THOS. G. NEWMAN & SON,**
246 East Madison Street, - CHICAGO, ILL.

## British Bee Journal

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On and after Feb. 1, 1890, we will sell our No. 1 V-groove Sections in lots of 500 as follows: Less than 2,000 at $3.50 per thousand; 2,000 to 5,000 at $3.00 per thousand. Write for special prices on larger quantities. No. 2 Sections $2.00 per thousand. Send for Price-List for other Supplies. Address,

**J. STAUFFER & SONS,**
(Successors to B. J. Miller & Co.)
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## PATENT WIRED COMB FOUNDATION

**HAS NO SAG IN BROOD FRAMES.**

## THIN FLAT BOTTOM FOUNDATION

**Has no Fish-bone in Surplus Honey.**

Being the cleanest is usually worked the quickest of any Foundation made.

**J. VAN DEUSEN & SONS,**
Sole Manufacturers.
Sprout Brook, Montgomery Co., N. Y.
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## Italian Queens by Return Mail

Tested, $1.00 each. Untested, 60 cts. each, or four for $2.00.

34Atf **GOOD BROS.,** NAPPANEE, IND.
*Mention the American Bee Journal.*

## Choicest Italian QUEENS!

**Purely** BRED—**Purely** MATED. Won first premium over all competitors at Buffalo International, September, 1889. NONE BETTER IN AMERICA! Send for Price-List. Order **early.**

Great reduction in price. Former prices superseded. Select tested, $1.50; Tested, 75c. Five Apiaries to draw from. Can ship by return mail in any quantity.

**E. D. KEENEY,**
**Importer and Breeder,**
ARCADE, - NEW YORK
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## ELECTRICITY, HOME TREATMENT

**ALL PHYSICIANS AGREE** that every family should have an ELECTRIC BATTERY in their home. A mild Electrical current will ease the whole body, giving that sweet sleep to the well and tired, as to the invalid suffering from blood and chronic diseases, and who find **night their worst time to rest. ELECTRICITY** will surely relieve and in thousands of cases permanently cure any of the following diseases: Paralysis, Sciatica, Nervousness, Neuralgia, Catarrh, Loss of Voice, Asthma, Malaria, Dyspepsia, Liver Complaint, Constipation, Rheumatism, Diseases of the Kidneys, Female Complaints, Seminal Weakness, Impotence, Varicocele, Hydrocele, Exhausted Vitality, resulting from ignorance, Overtaxation, unfitting the victim for work, business, or the social and other relations of mankind. The Battery is always ready, and can be used at a moment's notice.

By all means use the WILLIAMS' DIAL or PERFECTION BATTERY. The **Dial Battery** is enclosed in a beautifully polished mahogany finished box, 3in. high, 3 deep and 3 wide. All the interior parts are nickel-plated and finished in the very best style. It gives five different currents. The strength is regulated by the Dial; this shows the quantity of electricity you take. The Battery cannot get out of order, and it is impossible to cause injury in any way. The regular price of the Dial Battery is Twelve Dollars ($12.00), but to introduce it, we will, for the next 90 days, fill orders for this splendid machine at the **wholesale price, $9.00.**

**OUR PERFECTION BATTERY,** standing 6 inches high, 5 1-2 deep by 5 1-2 wide, is a marvel in beauty and finish, and thoroughly reliable. It gives five different currents. Price, Five Dollars ($5.00). Our Batteries are securely boxed and shipped to any part of the country, on receipt of price. We send C. O. D. on receipt of One Dollar, **subject to full examination at Express Office by your family physician,** if you so desire. Send money by registered letter, post office order, or bank draft. **UNITED STATES BATTERY AGENCY,**
**177 & 179 Montague Street, Brooklyn, N. Y.**

☞ **CIRCULARS, GIVING FULL INSTRUCTIONS, SENT ON APPLICATION.**

23Ctf WHEN ANSWERING THIS ADVERTISEMENT, MENTION THIS JOURNAL.

# I HAVE COME

To say to the readers of the BEE JOURNAL that you can get **Italian Bees and Queens** from the

## KNICKERBOCKER BEE-FARM,

By **Return Mail or Express,** at the following prices:

| | Each. | Per ½ doz. | Per doz. |
|---|---|---|---|
| Virgin Queens | $ .40 | $2.00 | $ 3.50 |
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